

EXHIBIT 9

QUANTEL LIMITED
DLS 6000/1
OPERATING INSTRUCTIONS

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DLS 6000

OPERATING INSTRUCTIONS

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DLS 6000 OPERATING INSTRUCTIONS

SECTION 1 INTRODUCTION TO THE DLS 6000

1.1 Introduction

The Quantel DLS 6000 is a still picture storage and retrieval system complete with production effects capability. The main elements of the system from an operational point of view are shown below (Figure 1).

The pictures are stored on the discs, and are accessed from these and displayed on the output monitors by the DLS 6000 Main Frame. Control of all recording, replay, effects and library functions is undertaken from the operators control panels.

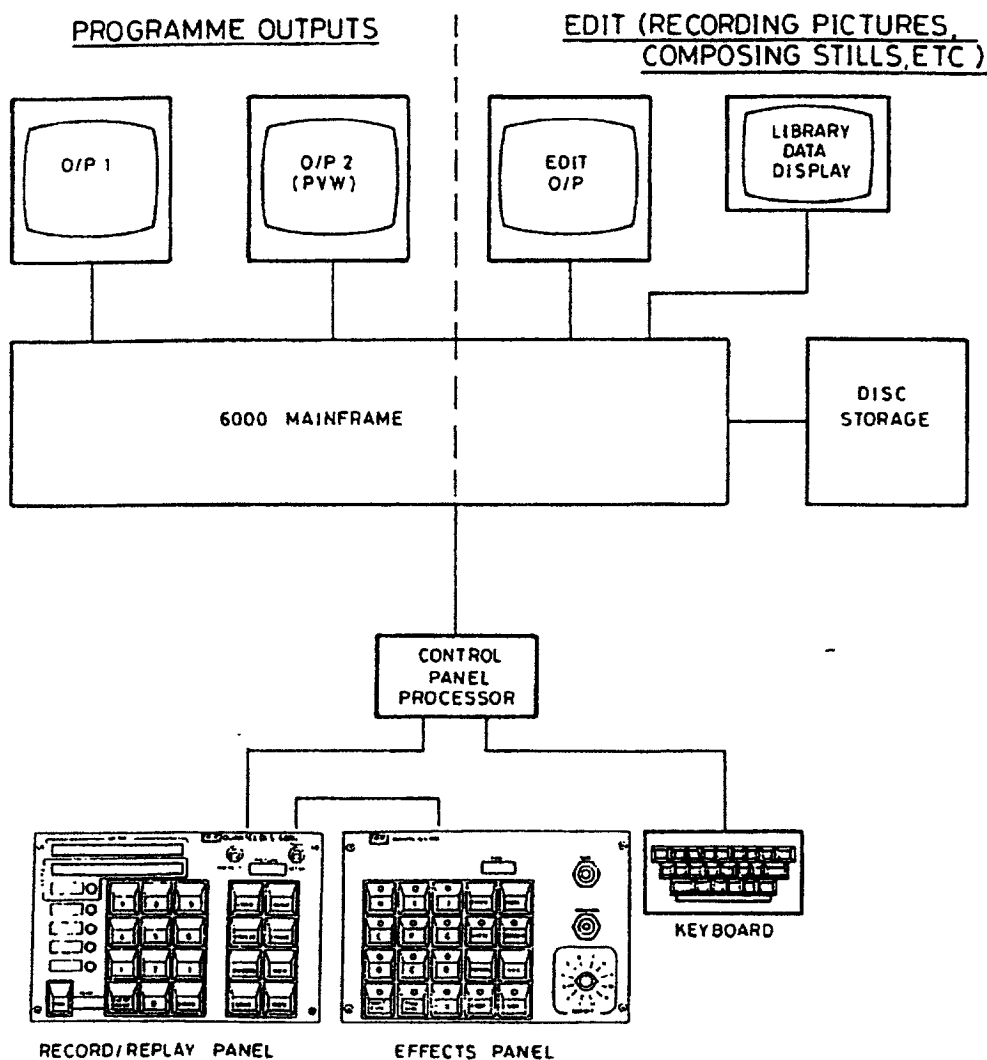


Figure 1 The Main Elements of the System

1.2 System

The inner workings of the DLS 6000 are of no significant interest to the operator, but it is worthwhile explaining briefly the important concepts of operation.

The picture information for each still is recorded on disc. Retrieval from the disc into an output framestore takes around one second, and if this operation is output to a video monitor it appears as a vertical wipe. To increase the flexibility of the machine two output framestores are used. In normal operation one of these is used as a preview output (displaying the wipe), and the other a main output. Switching the framestore outputs after the wipe produces a clean cut between stills. Alternatively an internal dissolve may be used, or an external mixer used to wipe between the two. In this way the DLS 6000 can be fully integrated as a production tool in any live or post-production studio.

A third framestore in the DLS 6000 provides an editorial output. This can be used for selecting, resizing, cropping, etc. stills before playback on the main outputs. It is also used when recording a still, so that stills can be input to the DLS 6000 while the main outputs are being used on air.

Access to the main output framestore and the editorial framestore can be completely independent. This allows two modes of operation known as:-

- PLAY - operating on the main output framestores
- SET-UP - operating only on the editorial framestore

The mode of operation of any set of control panels is determined by the PLAY/SET-UP switch. This method also allows two sets of control panels to be used simultaneously, one in PLAY and one in SET-UP. Operation with two sets of panels is explained in detail in Section 5.5 Two User Operation.

Note that the keyboard operations can only affect SET-UP i.e. the EDIT output.

The system concept allows great flexibility in storage and replay of pictures. Pictures can be reduced and repositioned, they may be cropped to reveal only important features, and borders or matte backgrounds may be added. Sequences of pictures can be stored complete with any of these features, these sequences being known as STACKS. Operational details of these features are found in Section 3.

Management of library records is provided via the keyboard and a dedicated monitor output. This is used for tilting and general library management. Details of operation of the Library Records Control is found in Section 4.

SECTION 2 GENERAL INFORMATION

2.1 Operating Conventions

A simple convention has been adopted for writing the operational button push functions. For example, to clear the playback STACK the following action is needed:-

- a) Press and hold down the CLEAR/ERASE button.
- b) Press the STACK button.

This would be written

CLEAR **STACK**

Similarly, to TAKE a series of pictures in a STACK, the following action is needed:-

- a) Press the STACK button.
- b) Press the digits corresponding to the STACK number (e.g. 56).
- c) Press TAKE to load the stack.
- d) Press TAKE once to display the first picture in the STACK.
- e) Press TAKE again to display subsequent pictures in the STACK.

This would be written:-

STACK **5** **6**
TAKE
TAKE
TAKE

Or more generally

STACK **X** **X**
TAKE

Some of the DLS 6000 buttons have an LED indicator built in to indicate ON or OFF of that particular function. The required state of this LED for the operation being described is indicated as follows:-

- FRAME** ^{ON} : The LED is illuminated and FRAME is selected.
- FRAME** ^{OFF} : The LED is extinguished and FRAME is not selected, giving in this example the FIELD mode.
- FRAME**- : This means push the button, but the LED state is not relevant.

There are various displays on the DLS 6000 operators panel to prompt and reassure the operator. The most important ones are:-

- a) **TEMP** : This shows the latest action on the keypad, and is filled by any action on the outlined buttons.

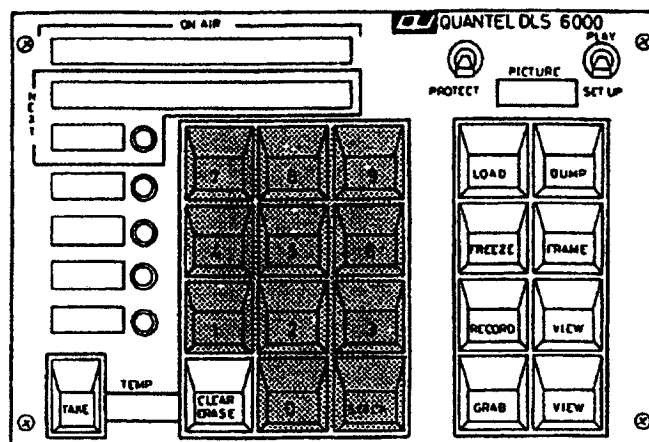


Figure 2 DLS 6000 Control Box

Various actions empty this display, and this will become clear later.

- b) **PICTURE** : This display shows a number of functions. These are generally
- i) Picture number of picture on air.
 - ii) Picture number of picture recorded.
 - iii) Stack number of stack recorded
 - iv) Various other information, e.g. confirmation of erasure, picture number USED, etc.
- c) **ON AIR** : This always shows the title of the picture in the main output, or the EDIT output, depending on the mode of operation of the control box.
- d) **NEXT** : This shows the title and number of the next picture available in a stack.
- The displays below this show in sequence the picture numbers following in the STACK.
- e) **TIME** : This is used for the time for a dissolve, and other information pertinent to effects.

When a display contains or changes information pertinent to the operation being undertaken, this is illustrated as follows:-

STACK	5	6	TEMP	:	S 56
TAKE			PIC	:	S 56
			TEMP	:	
			NEXT	:	PRIME MINISTER 123

TAKE

PIC : 123
ON AIR : PRIME MINISTER
NEXT : PRESIDENT OF USA
 124

TAKE

PIC : 124

This illustrates loading of stack 56, which contains pictures 123, 124, etc. The first TAKE loads the stack, therefore the *PICTURE* display reads STACK (S) 56. The *NEXT* register then contains the title and number of the first picture, *PRIME MINISTER 123*. Following the next TAKE, this is loaded into the *ON AIR* display, and the *NEXT* display contains title and number of the next picture, *PRESIDENT OF USA, 124*.

In practise it is not necessary to confirm all displays. Therefore only significant displays will be used for clarity, e.g. the above example may be reduced to:-

STACK **5** **6** *TEMP* : S 56
TAKE *PIC* : S 56
TAKE *PIC* : 123

The abbreviations preceding the line displays are always used as follows:-

- a) *TEMP* for TEMP
- b) *PIC* for PICTURE
- c) *O/A* for ON AIR
- d) *NEXT* for NEXT
- e) *TIME* for TIME

All the control buttons have a unique name, so there is no need to qualify the chosen button. The one exception is the two view buttons, one to the right of RECORD and one to the right of GRAB. These will be referred to and written as:

RECORD VIEW - **R.VIEW**
 GRAB VIEW - **G.VIEW**

Throughout the text of this booklet.

The small round buttons alongside the *NEXT* and subsequent displays are important. This will be illustrated as:-



(N)
 (1)
 (2)
 (3)
 (4)



As they appear on the panel

or generally as F which will refer to the next available Free display button.

Where a number is unspecified from the keypad, it will be written as **X** (e.g. **STACK X X**).

Where a letter is unspecified from the keypad for effects it will be written as **A-J**.

Use of the joysticks will be illustrated by , and of the rotary border and matte selector by .

Note: All the above notations are particularly pertinent to the control panels RECORD/-REPLAY and EFFECTS. The keyboard keystrokes are simply illustrated by the particular key, e.g.  or .

2.2 Operational Pre-Requisites

The following assumptions are made generally throughout the following text, except where stated.

- a) The equipment is correctly installed and provided with all necessary signals.
- b) The equipment is switched on and fully operational (see Section 2.3 - Switch On).
- c) Only one set of control panels (i.e. a single control station) is connected (see Section 5.5 for two station operation).
- d) The system is operating with a single user file. This is always the case on switch on. Refer to Section 3.15 if in doubt and for details on changing user numbers and their implications.
- e) All three output monitors and the data display monitor are available to the operator.
- f) All the discs and panel switches are in PROTECT OFF mode.

If there are any doubts about the above points please refer to the Service Manual and/or installation engineer.

SECTION 3 OPERATION

3.1 Introduction

The full potential of the DLS 6000 can be somewhat awesome to an operator fresh to the machine. Therefore the following operational procedure has been divided clearly into set areas. It is intended that operators only concerned with certain aspects of the machine may limit themselves to those sections, e.g. the RECORD section may be omitted for operators only using a REPLAY panel.

3.2 Simple Picture Recording

Recording pictures is only possible when in SET UP, so ensure the PLAY/SET UP switch is in the SET UP position. All work done in this position is viewed on the EDITORIAL Monitor.

FREEZE _{OFF} will reveal the input video (for recording) on the EDIT monitor.

FREEZE _{ON} will freeze this input.

This will always appear at this stage as a FRAME freeze. The frozen picture, now a STILL, can now be recorded as a FIELD or FRAME.

FRAME _{OFF} will select a FIELD

FRAME _{ON} will select a FRAME

This should be determined depending on the content of the frozen STILL.

RECORD *PIC* : *XX* The STILL has been recorded as picture number XX.

In the above example, XX was the next free picture number selected automatically by the DLS 6000. A chosen number may be used however by the following procedure.

1 **2** **3** *TEMP* : *123* Select required number (e.g. 123 max. 4 figures).

RECORD *PIC* : *123* The still has been recorded as 123.

If the number is already in use, the response will be:

PIC : *USED*

3.3 Viewing of Recorded Pictures

Any recorded picture can be viewed by the following procedure. This applies both in SET UP, where the viewed picture is seen on the EDITORIAL monitor, and PLAY, where the viewed picture is seen on the main output monitor.

1 **2** *TEMP* : *12* Enter the required picture number (e.g. 12)

R.VIEW *O/A* : *title* The required picture is transferred to the output.
PIC : *12*

Subsequent pressing of the R.VIEW button will view the subsequent recorded pictures, e.g.

R.VIEW *PIC* : 13

R.VIEW *PIC* : 14

etc. etc.

3.4 Replay of Single Pictures by TAKE

Pictures can also be transferred to the working panel output (PLAY - main output, SET UP-Editorial) by using the TAKE button, e.g.

5 **6** *TEMP* : 56 Enter required picture number (e.g. 56).

TAKE *O/A* : title The picture is transferred.
 PIC : 56

The important differences between the function **TAKE** and **VIEW** is as follows:-

VIEW is always full size.
 Only transfers the VIEWed picture to the main output.

TAKE will allow use of effects.
 will preload the NEXT picture in a STACK.

The importance of TAKE will become clear in further sections.

3.5 Composing a STACK ON AIR

This section assumes the panel to be in PLAY.

1 **1** **3** *TEMP* : 113 Select picture required (e.g. 113)

(N) *NEXT* : 113 Next picture is 113. Preview store will now be loaded with picture 113.

1 **1** **4** *TEMP* : 114 The following picture in STACK is selected (e.g. 114).

(1) *N1* : 114 The second picture (114) is loaded into the STACK.

9 **6** *TEMP* : 96 Select third required picture (e.g. 96).

(2) *N2* : 96 The third picture is loaded into the STACK.

8 **2** *TEMP* : 82 The fourth picture in the STACK is chosen.

(4) *N4* The fourth picture is loaded into the STACK.

A temporarily 'ON AIR' stack consisting of four pictures has now been made. This can now be played back as described in Section 3.6 'Play Back of Simple Stacks'.

3.6 Playback of Simple Stacks

Any STACK composed as in Section 3.5 'Composing a Stack 'On Air'' may be played back as follow:-

TAKE	PIC	: 113
TAKE	PIC	: 114
TAKE	PIC	: 96
TAKE	PIC	: 82

Notes:

- This section explains how to play back a stack already contained in the visible window. To load a pre-recorded stack into this window and play it back see Section 3.10.
- It is assumed that no production effects have been specified (see Sections 3.8 and 3.9).
- This stack cannot be recorded for playback at a later date (recording stacks must be done in SET UP see Section 3.7).

The concept of the two outputs should clearly be seen. When playing back a stack such as above. The next picture will cut to the output, and the following picture be pre-loaded into the preview framestore each time the TAKE button is pressed.

3.7 Recording a Stack

This must be done in SET UP.

It is important to remember that the 'visible' stack is only a window on the full stack which can be up to 80 pictures long. This window will move up and down the stack with the TAKE button, so it is clear that pictures in a stack can exist above or below the visible window, see Figure 3. The first operation that must therefore be carried out when recording a stack is

CLEAR	STACK
-------	-------

This will clear the stack of all existing pictures. A stack can then be built in two ways:-

- Successive pictures in the stack are taken, e.g.

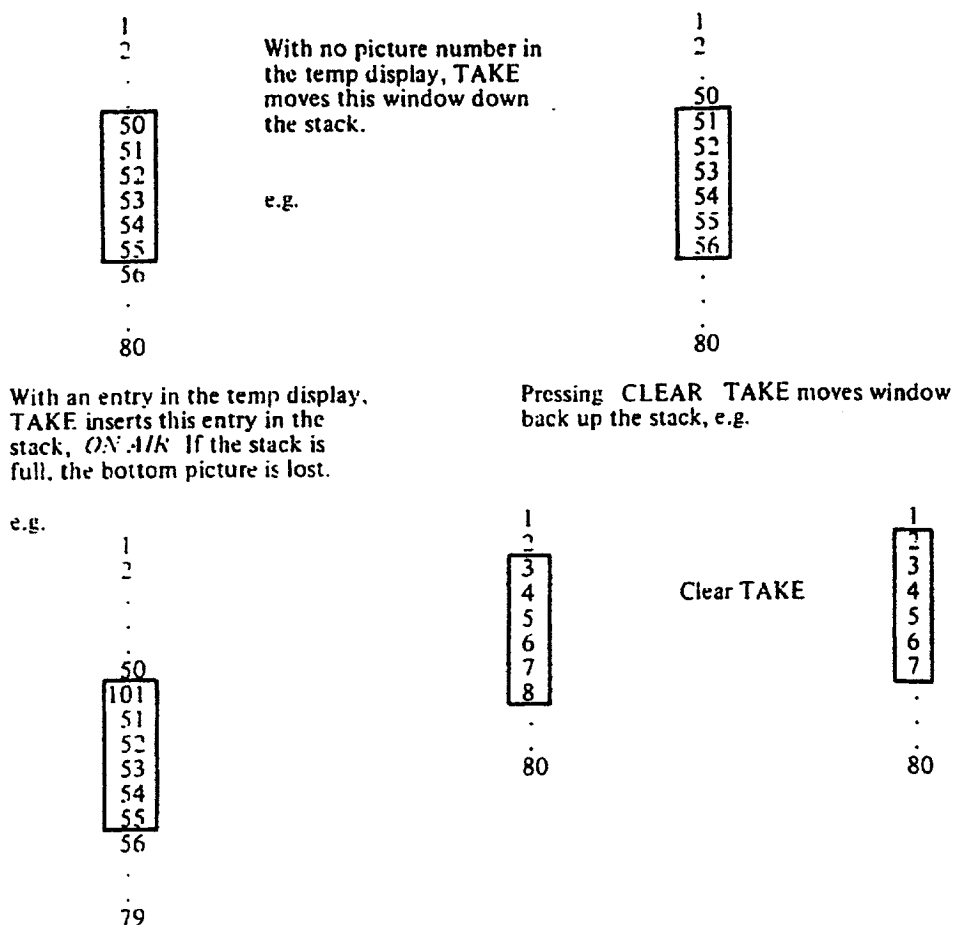
5	6	TEMP	: 56
TAKE		PIC	: 56
1	2	TEMP	: 12
TAKE		PIC	: 12
3	7	2	TEMP : 372
TAKE		PIC	: 372

etc.

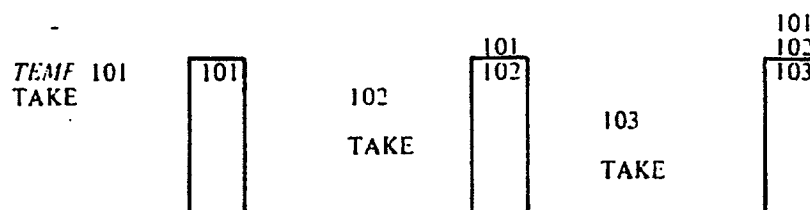
This process can be continued until all required pictures have been recalled (up to a maximum of 80).

Figure 3

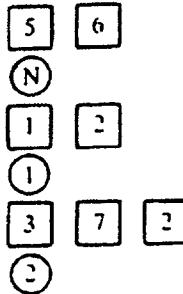
Stacks can consist of 80 entries and the control panel provides a visible window on this, e.g.



Clear stack erase all stack positions, putting the window at the top of the stack ready for entries e.g.

**Figure 3 Relationship of Visible Window to STACK**

b) Pictures can be inserted in the visible window, e.g.



This process can be continued until the visible window is full. More pictures can then be inserted in position 4, and the existing 4 will be pushed down 'below' the visible window (to position 5), and so on. This again can be continued until 80 pictures are in the stack, at which point the picture 'lowest' in the stack will be lost from the stack.

Note that the two above processes may be intermingled, but that pressing TAKE will insert the picture number in the *temp* register into the top position in the visible window (i.e. On Air). If no picture is called up in the *temp* register, the contents of the visible window will move up one position. This is illustrated in Figure 3.

Any picture can be removed from the visible window by the following procedure:-



CLEAR

This will clear the picture allocated position 1 from the visible window and shuffle up all pictures below.

When the stack is complete it may be recorded as follows

STACK	<i>TEMP</i> : S----
RECORD	<i>PIC</i> : SXX

The stack has now been recorded as STACK XX, where XX is the next available stack number.

Alternatively a Stack number may be defined, e.g.

STACK 3 0	<i>TEMP</i> : S30
RECORD	<i>PIC</i> : S30

If the chosen stack number is already allocated, the response will be:-

PIC : USED

The record procedure must then be repeated with an unused (or undefined) stack number.

This stack may now be played back in PLAY or SET UP modes (see Section 3.10).

3.8 Recording a Stack with Effects

If a production effects panel is fitted to the control station, stacks may be recorded with any of the available effects. This is achieved by selecting the required production effect preselect at the time of loading the picture into the stack.

Note: These preselects can contain any combination of the available effects and details of how to program these is contained in Section 3.9 Composing Effects.

The same procedure is therefore followed as in Section 3.7, but with the following additions:-

- a) 5 2 *TEMP* : 52 Select required picture.
A-J ^{ON} Select required preselect containing effect.
TAKE *PIC* : 52 Picture and effect are loaded into the stack.
- or
- b) 8 6 *TEMP* : 86 Select required picture.
A-J ^{ON} Select required effect.
F Press next available (or chosen) position in visible window.

As before, either of these processes are continued until the required stack has been built.

Note: The ten available preselects are recorded with the stack, at the time of recording the stack. Thus only ten different effects can be contained within a single stack. This however is not an important restriction, since stacks can be added to stacks and effects used from other stacks (see Section 3.16 Recording Stacks within Stacks).

3.9 Composing Effects

Any of the ten available preselects on the production effects panel can be programmed to contain any combination of the available effects. These are:-

Size, Position, Border, Matte fade time or selectable output. The method of entering each of the effects is identical, and therefore we shall describe how to setup each effect separately. At the point marked * in the instructions it is possible to leave the parameter being set up, and set up a different parameter. The final combination can then be entered together, using the standard routine:-

ENTER A-J Enter into the chosen preselect

This does not apply to fade time and output definition functions as these two are mutually exclusive.

Effects may only be composed when the panel is in SETUP.

3.9.1 FADE TIME

This will cause a fade to occur for the defined number of frames when any picture associated with this preselect is called up on the main output. Note that the fade will not occur when previewing the stack on the editorial monitor.

6 0 *TEMP* : 60 Select on keypad number of frames of fade required (e.g. 60 = 2 seconds (NTSC)).

MODE *TIME* : 60 This transfers the temp display to the TIME display.

* ENTER A-J The fade time is entered into the chosen preselect.

3.9.2 SIZE AND POSITION

Any picture can be reduced in size and repositioned on the screen (also partly off the screen). To set up this picture reduction, proceed as follows:-

SIZE^{ON}

SIZE



POSITION

The joysticks are now made operational and a white cursor will appear on the editorial output.

Adjust the size joystick until the cursor shows the required picture size.

Adjust the position joystick until the cursor shows the required picture position.

Note: These two steps can be interchanged and repeated until the required size and position is achieved. The joystick notation

is : both axis move together

horizontal axis only.

4 X 3***ENTER****A-J**

This step is optional and will return the size box to 4 X 3 aspect ratio.

When the required size and position has been obtained they may be recorded into preselect.

3.9.3 BORDER AROUND A REDUCED SIZE PICTURE

There are available twelve different borders which can be selected and stored under the **BORDER** button. These are selected as follows:-

BORDER

TIME : B XX

This displays the current border number stored under the border button.

If this is not the required border number, release the **BORDER** button and proceed as follows:-



Select the required border number on the rotary switch (see Appendix for details of available borders).

ENTER**BORDER**

The new border number is entered into the **BORDER** button.

BORDER

TIME : B XX

The new border number is displayed.

To enter this required border as part of a preselect:-

BORDER^{ON}***ENTER****A-J**

The required border is entered into the preselect.

Notes:


- A border will only be seen on a picture reduced in size.
- The **BORDER** button always contains the last used border number, whether recorded or played back.

3.9.4 MATTE BACKGROUND BEHIND REDUCED SIZE PICTURES

There are available twelve different mattes which can be selected and stored under the MATTE button. These are selected as follows:-

MATTE *TIME* : *B XX* This displays the current matte number stored under the border button.

If this is not the required matte number, release the MATTE button and proceed as follows:-

 Select the required matte number on the rotary switch (see Appendix for details of available mattes).

ENTER **MATTE** The new matte number is entered into the MATTE button.

MATTE *TIME* : *B XX* The new matte number is displayed.

To enter this required matte as part of a preselect:-

MATTE ^{ON} ***ENTER** **A-J** The required matte is entered into the preselect.

Notes:

- A matte will only be seen on a picture reduced in size.
- The MATTE button always contains the last used matte number, whether recorded or played back.

3.9.5 OUTPUT SELECTION

In normal operation the DLS 6000 will always write the next picture into Output 2 (Preview Output), and on a TAKE command transfer this picture to Output 1 (Main Output), via a cut or fade. It then writes the next picture into Output 2.

It is possible to change this by programming as part of a preselect a selectable output. The choices available are:-

- OP1 This will output the picture on TAKE to Output 1, appearing as a vertical wipe.
- OP2 This will output the picture on TAKE to Output 2, appearing as a vertical wipe.
- ALT This will alternately transfer the pictures to the two outputs.

This facility is very useful where both outputs are available at the vision mixer, and can be used to provide mixer effects between one picture and another.

The method of entering one of these options into a preselect is as follows:-

MODE *TIME* : *XX* This displays a fade time.

MODE *TIME* : *OP1* as previously discussed.

MODE *TIME* : *OP2* as previously discussed.

MODE *TIME* : *ALT* as previously discussed.

Continue pressing the MODE button until the required *TIME* display is revealed.

* **ENTER****A-J**

Enter the required output into a preselect.

3.9.6 **DON'T CARE**

This button has a very special meaning. If a picture is recorded in a stack with this as its chosen effect parameters, the still will be replayed with the same parameters on the previous still. This can be very useful, as it is only necessary to define the required parameters for the first still of a sequence of stills.

This effect can however be a trap for the unwary.

CLEAR **STACK** resets the effect parameters to 'Don't Care', and if a stack is recorded with only this parameter, the effect parameters of this stack on replay will follow the last effect of the previous stack replayed. This will obviously change if the previous stack is changed, and the user should be aware of this trap.

The 'Don't Care' facility however is a very useful time saving effect when correctly used, and the section on Worked Examples (See XX) provides some illustrations of this.

3.10 **Playback of Recorded Stacks**

The section assumes the panel is operating in PLAY mode, and the preview and main outputs are both available to the operator. It assumes a stack complete with effects has been recorded as discussed in Section 3.7 complete with effects if required (Sections 3.8 and 3.9).

STACK **1** **2**

TEMP : S12

Stack 12 is preloaded, that is the first picture in this stack is written into the preview output.

TAKE**TAKE****TAKE****TAKE**

As for simple stacks subsequent **TAKES** will transfer the picture in the preview output to the main output. This time however any programmed effect will take place. Fades will occur between preview and output if programmed and then the next picture is written into the preview store. Border and matte information are each written separately, and therefore each of these effects increases the time to 'prepare' the next picture in the preview output. A typical sequence of events would be:-

- (a) Fade between preview and main output.
- (b) Write Matte into preview store.
- (c) Write Border into preview store.
- (d) Write Picture into preview store.

Thus there can be a delay of up to four seconds between pressing the **TAKE** button and the next picture is ready for viewing. Early pressing of **TAKE** will not reveal an incomplete picture, a delay will occur until the next still is complete.

If this delay is unacceptable, the composite picture (with matte and border) can be replayed on the Edit output, and then recorded as a new picture. This can then be replayed as a full size picture with no effects.

3.11 Changing Stacks 'On Air'

This section assumes the replay panel to be in 'PLAY', and a recorded stack is available for replay.

STACK 26 TEMP S26

TAKE

Stack 26 is preloaded.

TAKE

The first picture in stack 26 is displayed.

The next picture windows will now be displaying the pictures in the stack order, e.g.

TEST PICTURE 100

(N) 100

(1) 101

(2) 102

(3) 103

(4) 104

The next picture title is already displayed in the next picture window. To see the title of any of the following pictures, press and hold its accompanying round button and the title will be displayed in the next picture register, e.g.

TEST PICTURE 102

(N) 100

(1) 101

(2) 102

(3) 103

(4) 104

Note that the picture is not displayed, only its title. Also any preselect associated with this still will be illuminated.

If it is now required to delete this picture, continue to press the round button and press CLEAR, e.g.

(2) CLEAR

Picture 102 will now be removed from the stack and the following pictures will shuffle up, e.g.

TEST PICTURE 100

(N) 100

(1) 101

(2) 103

(3) 104

(4) 105

To insert the next picture in the stack, first enter its number in the temp. register, e.g.

TEMP : 99 Picture 99.

Now select on the effects panel (if available) any of the ten effects recorded with the stack, don't care or full size.

e.g. Effect A selected.

Now press the small round button corresponding to the position in the stack you wish the picture to be, e.g.



The stack will now show:

TEST PICTURE 100	
(N)	100
(1)	101
(2)	99
(3)	103
(4)	104

All pictures below the inserted one will be shuffled down.

The stack has now been modified, and may be replayed as any other stack. Note however the modification has only been made 'on air', no change has been made to the recorded stack.

3.12 Applying Crop to a Picture

When a picture is to be replayed at a small size, it is possible to define an area of the picture to be displayed. This is known as CROP. There are two important features of CROP:-

- No expansion of any picture information is possible. Hence if a size greater than the area of CROP is to be replayed, more picture information outside the crop area is revealed.
- The CROP information is stored as part of the picture on the disc. E.g. if a single picture requires two different crop areas, two pictures each with its own crop must be stored on disc.

To apply CROP to a picture select the replay panel to SET-UP, and proceed as follows:-

TEMP : 56 Select the picture to be cropped.

Select CROP. Crosswires will appear on the picture which is now displayed on the EDIT output. (These show the current stored crop for this picture).



SIZE/POSITION

Use the size and position joysticks to position the crosswires around the area to be cropped.

Record the crop information.

Picture 56 now contains crop information, and this will always be used when the picture is played back. The following section 3.13 explains how this effects picture replay, and how it should be used.

• 3.13 Playback of Pictures with Crop

The crop applied to a picture will only affect the replay of a picture when it is replayed at a small size. The following illustrations will explain this feature.

CROP applied to picture:-



Replay Size:-

Smaller than Crop Size



Crop Size



Larger than Crop Size



The effect on replay is determined by the following rules:-

- (a) No part of the picture can be expanded.
- (b) All of the crop information is always revealed.
- (c) If size box is larger then the crop 'window', picture information outside the crop window will be revealed.
- (d) Picture information will always fill the size box.
- (e) If the size box is smaller than the crop window, the crop information only will be compressed.

These rules ensure that flexibility in positioning a small cropped picture is maintained, and no black appears around compressed pictures. All pictures are in fact recorded with a nominal crop, this ensures that compressed pictures do not reveal slight blanking errors etc., in the source material.

Note: Non 4 x 3 Aspect Ratio Sizes and Crops

If a full size picture is compressed into a non 4 x 3 aspect ratio, the picture information will obviously be distorted. However, if a new aspect ratio for crop is chosen, and a size box is made to match, no distortion will appear. Size information can be copied into crop by calling up a preselect containing size information while CROP is on. This will put the size crosswires on the screen, and the crop can then be recorded.

Crop information can be copied into size by calling up the required crop, and entering into a preselect A-J. Crop will then go out and the size button illuminate. Examples:

SIZE to CROP

<div style="border: 1px solid black; padding: 2px;">5</div>	<div style="border: 1px solid black; padding: 2px;">6</div>	temp : 56	Select picture to apply crop to.
<div style="border: 1px solid black; padding: 2px;">CROP</div>	ON		Crop on.
<div style="border: 1px solid black; padding: 2px;">A-J</div>	ON		Select required preselect containing size information.
<div style="border: 1px solid black; padding: 2px;">ENTER</div>	<div style="border: 1px solid black; padding: 2px;">CROP</div>		Record Crop.

CROP to SIZE

<div style="border: 1px solid black; padding: 2px;">5</div>	<div style="border: 1px solid black; padding: 2px;">6</div>	temp : 56	Select picture containing required crop.
<div style="border: 1px solid black; padding: 2px;">CROP</div>	ON		Crop on with required crop (must be previously recorded).
<div style="border: 1px solid black; padding: 2px;">ENTER</div>	<div style="border: 1px solid black; padding: 2px;">A-J</div>	ON	
<div style="border: 1px solid black; padding: 2px;">CROP</div>	OFF		Crop will go off, and size button will illuminate.
<div style="border: 1px solid black; padding: 2px;">SIZE</div>	ON		

Conversely, if a crop is to be placed in a size box of different aspect ratio (i.e. non 4 x 3 crop, 4 x 3 size) it is possible for picture distortion to occur. This possibility can be minimised by recording a 'Forced 4 x 3 CROP'. This will then open out the crop to try and maintain the correct aspect ratio. This can be recorded by the following sequence:

<div style="border: 1px solid black; padding: 2px;">5</div>	<div style="border: 1px solid black; padding: 2px;">6</div>	TEMP : 56	Select picture.
<div style="border: 1px solid black; padding: 2px;">CROP</div>	ON		Select crop.
<div style="border: 1px solid black; padding: 2px;">SIZE</div>			Select required crop size and position.





POSITION

 ON

Size and crop are now both on,
indicating a Forced 4 x 3 crop.

Record Crop.

The 'forced 4 x 3 crop' has now been recorded.

3.14 Recording Using the Grab Buffer

The Grab button enables live video to be viewed, frozen and recorded using a single button push. With live video at the input to the DLS 6000, pressing GRAB will initiate the following sequence:-

- (a) The video in the framestore is frozen.
- (b) The framestore information is recorded on disc in a special portion called the 'GRAB BUFFER'.
- (c) Live video is restored to the framestore.

This procedure enables the DLS 6000 to be used in a similar way to a camera with motor drive. Large numbers of stills may be taken as live action occurs, and stored automatically in the GRAB Buffer.

The contents of the GRAB buffer may then be viewed, using

This will view the contents of the Grab Buffer, and the temp register will display the Grab number allocated, e.g. G23. Stills that are required to be saved may then be transferred to the main portion of the disc by pressing RECORD. This will allocate a number and title in the usual way, and also remove them from the Grab buffer.

When all the stills have been viewed, and the required ones saved, the remaining pictures in the Grab buffer can all be erased using

The Grab buffer is then emptied ready for use again. The Grab buffer contains a maximum of 100 pictures (e.g. G0 to G99) this will be reduced if there is less space available on the disc(s) in the system.

3.15 Stacks Within Stacks

The DLS 6000 library system will allow playback and recording of stacks within stacks. When composing a stack (on air, or in SET-UP), a stack is simply entered instead of a picture number e.g.,

TEMP : 132

TEMP : 509

TEMP : 521

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2 7
3

TEMP : 27

On playback, S21 will shuffle up the register until it reaches the on air registers, when it will open to reveal its contents.

Stacks may be built within stacks to two levels deep. Levels greater than this will be ignored. Note that using TAKE to enter stacks into stacks will simply play the chosen stack.

3.16 Erasing Pictures

Pictures can be erased using the Record/Replay Panel in SET-UP only by the following procedure:

5 2 0

TEMP : 520

Select picture to be erased (e.g. 520).

CLEAR RECORD

PIC : OK

The picture has been erased.

If the disc is protected, no erasure will take place and the PIC register will display PROT for protected.

3.17 Erasing Stacks

Stacks can be erased by a similar procedure to that for pictures. The Record/Replay panel must be in SET-UP, and the procedure is:

S 3 7

TEMP : S37

Select stack to be erased.

CLEAR RECORD

PIC : OK

Stack 37 has been erased.

3.18 'Cheapskate' Titling (Set-up Only)

If the keyboard is not in use, there is a simple method of titling pictures or stacks, called 'Cheapskate' titling. The procedure is as follows:

5 2

TEMP : 52

Select in temp register picture or stack number to be titled.

C H E ..

O'A : CHE...

Type on the keyboard the required title.

RETURN

Type return on keyboard and the new title has been entered.

Care should be taken when using this facility that the correct picture is being titled. It is advisable to view the required picture before titling it.

3.19 User Numbers

3.19.1 CONCEPT OF USER NUMBERS

A user number is a feature of the DLS 6000 which allows different operators to use the system at different times, and yet remain confident that all their work remains untouched. The principles are as follows:-

- (a) There are ten user numbers, 0-9.

- (b) An operator, a user, should 'log into' their own number when using the system.
- (c) Each user can then record any pictures or stacks using any numbers in the range available, e.g. 0-9999 for pictures, 0-99 for stacks. It does not matter if these numbers are used by another user, each user has the full range available, e.g.

USER 1 may have picture 100 - PAGE THREE GIRL.

USER 7 may have picture 100 - POPE ARRIVES IN POLAND.

This way each user's work is self contained.

- (d) A user may not view another users pictures using the operator panels. However he may view other users pictures using the keyboard (see Section 4) in which case the pictures will appear to him 'unnumbered'. He may renumber these pictures with his own numbers, and the picture then has two numbers, one for each user. They may then be used as if they were his own pictures, with the restriction that he cannot refer back to crop or erase them.
- (e) Only the 'owner' of a picture can crop or erase a picture. If the owner applies a crop, this crop will appear for all users of this picture. If the owner erases the picture, and it is still in use by another user, it will not be erased from the disc.

Note: The user number feature may be inhibited to allow only USER 0. This may be done inside the DLS 6000 mainframe. Refer to Service Manual for details.

3.19.2 CHANGING USER NUMBERS

To change a user number on the operators panels, proceed as follows:

CLEAR	X	TEMP : USRX	Select required user number.
TAKE		O/A : USRX	Take user number.

You are now operating as USER X on the operators panels. This will be confirmed on the On Air register each time PLAY or SET-UP is selected.

Details of how to change user numbers from the keyboard are contained in Section 4.2.3.

3.19.3 PROTECTING USER NUMBERS

Entry to a user number may be protected by a four-figure pass-number. The pass-number may be chosen and entered from the keyboard (see Section 4.2.3). The procedure then for entering a protected user number from the operators panels is:-

CLEAR	X	TEMP : PASX	Select user number. Passnumber is required.
1	2	3	4
		TEMP : 1234	Type passnumber (e.g. 1234)
TAKE		O/A : USRX	User X is selected.

If an incorrect passnumber is selected, BAD will be displayed in the On Air register and the user number will remain unchanged.

SECTION 4 LIBRARY RECORDS CONTROL

4.1 Introduction

The DLS 6000 keyboard and accompanying monitor display provide all the necessary facilities for examination and upkeep of the library records. They enable pictures to be titled, renumbered, erased, transferred to or from tape backup, and all the other facilities necessary to keep efficient library records. In addition selective searching for pictures by keyword and title is possible, to enable operators to swiftly find pictures on a particular subject.

To enable the library system to work efficiently it is imperative that all operators with access to the keyboard, work within the same terms of reference. These have deliberately been left largely undefined, to enable individual applications to be accommodated very flexibly. It is therefore suggested that before the system goes into full scale use that this section is carefully read and understood. Decisions can then be made on titling, temporary storage, permanent storage, archiving, etc., to suit the particular application. This will then provide the ground rules which obviously must be followed to enable the best use of the DLS 6000 system.

This section will explain the various features and capabilities of the keyboard control of the library records. Sufficient operational detail will be included to allow full use of the system. Please note however, that only rarely is it necessary to define individual keystrokes, as the complete system is very conversational, and prompts and replies are provided to all necessary functions.

4.2 Description

Note: Keyboard control of library records uses the editorial output for some functions. This should be noted by operators.

Keyboard control of the library records is entered by typing ESC on the keyboard. The monitor display will then reveal some status information on the DLS 6000 system. This information is as follows:-

CURRENT USER NUMBER:

Current Preferred Disc:

Drive 0. XX Unused fields, status (e.g. ready, protected).

1
2
3
4
5
6
7

Status information if fitted.

Default picture title:

Default stack title:

User No.

Picture Stack Manage System. Quit : Select Mode

The last line of the display gives the options available to the operator. To select an option type the first letter of the option on the keyboard. The three major commands at this stage enter the three major routines available. These are detailed in the following sections.

4.2.1 PICTURE

Entering this routine displays sixteen picture titles from a buffer of 100. At the bottom of the display are again the options available to the operator. All the available options refer to the buffer of 100 picture titles, or specifically the sixteen displayed picture titles within the buffer. The commands are as follows:

SEARCH This will search all titles in the library system for specific keywords or numbers. Matching picture titles are then placed in the buffer, sixteen of which are displayed on the monitor screen.

Search is probably the most powerful routine, and the following points may be useful when searching for specific titles.

- (a) A search will look for a given character string at the beginning of a word, i.e. keyword AND will find *ANDREW*, *ANDROID*, but not *SAND*.
- (b) ? can be used as a wild card, e.g. ?AND will find *SAND*, *BAND*, etc.
- (c) Two keywords in one title can be given by a space between them, i.e. *PRESIDENT AIRPORT* will find *President Arrives at Airport*, but not *Londons Third Airport*.
- (d) Two separate keywords can be searched together by using & i.e. *GIRL & SHUTTLE*, will find *Page 3 Girl and Shuttle Landing*.
- (e) Typing RETURN instead of a keyword will find all titles in the library.

MORE : This routine will add any remaining picture titles found after search when space is available in the buffer. For instance the library may contain 120 pictures containing the keyword GIRL. The buffer will be full with the first 100 pictures, but 50 of these are *American Girls* and you require *English Girl*. This 50 may then be lost from the buffered (see LOSE), and the remaining 20 added simply by typing M for MORE.

KEEP : This will keep in the buffer titles containing the required keywords, and lose all other pictures from the buffer.

The same notation applies to the keywords as applied to SEARCH.

LOSE : This will remove from the buffer pictures containing a keyword match.

The same notation applies to keywords as applied to SEARCH.

RECALL : This will recall the last step taken from the keyboard.

BROWSE : This will display on the editorial output the sixteen pictures from the title buffer displayed on screen at a 16th of the full size.

UP : This will move the window of sixteen titles of the buffer up the buffer.

DOWN : This will move the window down the buffer.

TITLE : This can be used to retitle an individual picture. It is called up by referring to the reference letter alongside it in the buffer window.

NUMBER : This can be used to number or renumber a picture in the buffer. Individual pictures or groups of pictures can be renumbered together.

ERASE : This is used to erase from the disc all the pictures in the buffer. Selective use of SEARCH, KEEP and LOSE can leave the buffer full only of the pictures no longer required, and then the full buffer can be erased.

VIEW : This will view full size on the editorial output a selected picture from the buffer window. It also displays information about the type of picture, and its current users and owners.

QUIT : This command will revert the display to that detailed in Section 4.2.

4.2.2 STACK

Selecting **STACK** will enter the routine for making or amending stacks. The display will show a list of the first sixteen picture titles in a stack (if one has previously been loaded) and a list of commands at the bottom. These are as follows:

FETCH : This will fetch a stack and display its first sixteen picture titles on the screen in the stack buffer.

RECORD : This will record the contents of the stack buffer (however amended) as a new stack. Note that stacks may be titled as part of this routine.

ERASE : This will erase a selected stack.

UP : This will move the visible window up the stack.

DOWN : This will move the visible window down the stack (to reveal up to 80 entries).

INSERT : This will insert a chosen picture with effects into the stack.

KILL : This will remove a chosen entry from the stack.

GET SIZE : This allows the operator to copy preset information from a known stack into a stack.

**CLEAR
STACK :** This will clear the stack from the screen.

QUIT : This will return to the display shown in Section 4.2.

4.2.3 MANAGE SYSTEM

Entering this part of the library system enable various routines for library management. These are:-

LOAD : This routine will allow pictures to be selectively loaded from the tape-back-up system. **LOAD** can be by keyword if required (options available as for **SEARCH** in Section 4.2.1).

During the **LOAD** operation new numbers may be allocated to the incoming pictures, or they may keep the numbers allocated when put on tape. If it is decided to keep the original numbers, then the DLS 6000 will ask for a **CLASH** number. If during a load an incoming picture number corresponds with one already in the DLS 6000, the picture already stored will be renumbered with the first **CLASH** number. This way any pictures which are renumbered may be easily found by **SEARCH**ing by numbers from the **CLASH** number allocated.

Note: Full details on the digital Tape Back-Up system are contained in Section 5.1.

DUMP : This routine is used for selectively **DUMP**ing pictures onto the tape back-up system in digital form. **DUMP** may be by titles or numbers, and in this way only chosen pictures may be dumped onto a given tape.

**USER
NUMBER :** This may be used to change the **USER** number of the keyboard control. The keyboard may operate in a different user number than the record/replay panels, but when entering keyboard control the panel user number is always transferred.

ENTER-PASSNUM : This is used for entering a four-figure passnumber for the current user number.

Note: Once a passnumber has been entered it cannot be viewed from any of the operators panels.

CURRENT DISK : This routine can be used to change the preferred disc. The DLS 6000 will automatically set the highest number disc in the system as the preferred disc, but this can be overwritten for specific purposes. For instance one disc may be allocated to a current affairs program, and all material for this program entered on this disc. When the program has finished the disc may physically be write-protected by its front panel switch, and no operator control can erase those pictures.

SFT-DEFAULT : This again is a very powerful routine. When pictures are recorded on the DLS 6000 they are given a 'default title'. This is automatically set by the the DLS 6000 to be 00 followed by the four figure picture number. Thus any new picture can be found by SEARCHing by title for 00.

However, it is possible to change the default title to a specified title. E.g. it may be a program name, or the date. In this way all new pictures may be found using the SEARCH routine, but there is already allocated some descriptive comment.

Leading spaces on titles are valid, hence the date may be placed at the end of the title, and descriptive information filled in at the end of each day, for example.

The above rules also apply to STACKS which are also automatically given a default title of 000 followed by the stack number. They also may be given an alternative default title, but note that it is not possible to SEARCH by title for STACKS. It is therefore advisable to incorporate in the stack title the stack number.

PRINT : If an external printer is connected to the printer port details of pictures and stacks may be printed out for reference and accompany digital tape dumps. (See Service Manual for printer port details.)

Print outs may be by keyword and title or by number.

QUIT : This will return to the display shown in Section 4.2.

4.2.4 QUIT

- Typing Q for QUIT when the menu display of Section 4.2 is on screen will shut down the keyboard control. To regain control type ESC.

SECTION 5 OTHER FACILITIES

5.1 Tape Back-Up

The DLS 6000 has a tape backing facility, which can greatly extend the storage of the library system. Pictures can be transferred to video tape using a digital format, which ensures no loss or degradation of the picture material, even when U-Matic tape is used. Any video tape machine from a capstan servo'd U-Matic up to 2" machine may be used, but the stored picture quality will remain the same.

Pictures can be DUMPed to tape or LOAded from tape using either the keyboard control (see Section 4.2.3) or from the main operators panels (see Section 5.1.1). Each picture takes approximately six seconds to transfer, and this should be allowed for when initiating LOAD or DUMP procedures.

The DUMP output to the tape machine is output from the DLS 6000 via the editorial output, and the LOAD input from tape is input to the video input, and may be monitored on the editorial output.

5.1.1 LOAD AND DUMP FROM RECORD/REPLAY PANELS

Full detailed control over LOAD and DUMP using keywords and numbering is available using keyboard control (see Section 4.2.3). The LOAD and DUMP buttons on the Record/Replay Panel do however enable the operator to LOAD and DUMP to and from tape without reference to the keyboard. The procedure and limitation when using this control is as follows:-

(a) DUMP

Simply pressing the DUMP button will initiate a dump to tape of all pictures for the selected user in the library system, starting at the lowest number picture and working upwards. This DUMP can be aborted at any time by pressing DUMP again.

Alternatively a DUMP can be initiated from a selected picture number by the following procedure:-



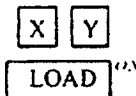
TEMP : XY

The Dump will then commence from picture XY. Again it can be aborted by pressing DUMP again.

(b) LOAD

When loading from the Record/Replay panel no facility is provided for keyword matching. However the option of renumbering or keeping the original numbers of pictures loaded from tape is available, but only via a mainframe configuration switch. This option should therefore be chosen during a familiarization period, and all operators made aware of the chosen notation.

Load is initiated by the following procedure:-



TEMP : XY

Hold down the LOAD button until the LED stops flashing.

Load will now be initiated as follows:

- (i) For 'renumber' loads, the first picture loaded will be number XY, all subsequent pictures will be given the next available number following XY.

(ii) For 'keep number' loads, XY becomes the 'clash' number as described in Section 4.2.3. Any pictures already having a number matching that of the loaded pictures are renumbered starting at the clash number.

(iii) If no number XY is entered before pressing LOAD, 'renumbered' loads commence at 0. 'keep number' loads allocate the clash number to follow the last loaded picture.

Note: It is important to note the following when loading or dumping to or from tape, via the keyboard or operators panels.

1. Video input to the DLS must be switched to the output of the tape machine for LOAD. An adjustment in the mainframe may be necessary to match the LOAD to the type of tape machine used. See the DLS Service Manual for details. If a monochrome switch is available on the tape machine, this should be switched on.
2. The video output marked EDIT should be switched to the input of the video tape machine for DUMP operations. Note this prevents the EDIT output from displaying any picture information, and the display picture at the start of the DUMP operation will be lost.
3. LOAD and DUMP operations access the disc units at their fastest speed, and do this constantly. Therefore no other DLS read or write operations can take place during LOAD or DUMP. This applies to all outputs of the machine. Pictures already stored in the main outputs may be displayed without degradation, but no new pictures may be transferred to or from disc.

5.2 Input Video Select (PAL Only)

Input video to the DLS 6001 may be RGB or PAL encoded. The DLS 6001 is capable of storing the extra resolution available with RGB, and therefore if RGB sources are available this method of input is to be recommended (e.g. caption generators, cameras, etc.). The selector switch for RGB or encoded input is inside the DLS 6000 mainframe, and can be removed if required. See DLS 6001 Service Manual for details.

5.3 Key Input

The DLS 6000 can accept a key input to match incoming video to allow captions etc., to be overlayed on other pictures from the library. The key input must be selected by a switch inside the mainframe, although this can be removed for operator control (see Service Manual for details).

The procedure for recording a 'key and picture' is as follows. The required key should be input to the KEY IN socket, and the EDIT output unfrozen to reveal input video. With the key enable switch on, input video will only be seen inside the key area. Hence if a key from a caption generator is fed to the KEY IN, and coloured matte is input as VIDEO IN, a coloured caption will be seen.

If this is now recorded, the full frame or field is stored as a key and picture. If this picture is now recalled in any way, only the key and picture will be written over the existing output contained in the framestore. In this way captions etc., can be overlayed over any other picture stored in the library.

Once a picture has been stored as 'key and picture' the key enable switch may be turned off, and pictures recorded in the normal manner.

5.4 Key Output

An output key is available from each of the DLS 6000 outputs. When full size pictures are replayed or small size pictures overlayed on a coloured matte this key is full screen.

However, when small size pictures are replayed over MATTE 1, the key out will match the small size picture or pictures. Thus MATTE 1 is a 'no key' matte, and is different from black matte, MATTE 7.

Using this key output small size pictures may then be overlayed over live video using a standard key input to a vision mixer.

5.5 Two User Operation

Two independent sets of control panels may be connected to the DLS 6000 at any time. One set of panels may be operating in PLAY mode, the other in SET-UP. The middle position of the three position selector switch is OFF, which enables the other set of panels to operate in either mode.

If a panel attempts to select a mode already in use, the message BUSY will be returned and entry to that mode will be inhibited.

In this way one panel may be used in PLAY to control the 'On Air' output, whilst the other panel is grabbing pictures and assembling the stacks for use later in a program.

The restriction on this method of operation is that only one disc access may be made at any one time. Hence it is possible to have a slight delay before the next picture is written from disc into the framestore. However the PLAY panels always have priority, and will interrupt any sequence playing on the SET-UP panels, although they will not interrupt a disc access.

Note also that independent to these two panels the keyboard may still be used. However certain keyboard functions affect the EDIT output, and this must be noted by the operators.

Each of the sets of panels (and also the keyboard) may be operating under a separate user number.

SECTION 6 WORKED EXAMPLES

As an illustration of how to combine some of the various functions of the DLS 6000 a few examples are included to aid new operators.

- (a) Record three pictures, title them, assemble into a stack for Replay (no production effects). Replay on main outputs.

(i) Panel in SET-UP.

(ii) **FREEZE** OFF

Reveal the input video on the Edit framestore.

(iii) **FREEZE** ON

Freeze the video at the required point.

(iv) **FRAME** ON

If the frozen picture is as required, select field or frame (for recording).

(v) **RECORD** PIC : 100

Picture is recorded in next available number (e.g. 100).

Repeat steps (i) to (v) for next two pictures. (e.g. 101, 102).

On keyboard, enter picture buffer

ESC **P**

This may contain some previous information. Clear the buffer by LOSEing all pictures, e.g.

L **RETURN**

You may now Search by title and add to the buffer all pictures with a default title beginning 00.

This is the title automatically given by the DLS 6000 unless otherwise selected. It consists of 00 followed by the four figure number allocated. See Section 4.2.3 for details.

S

Search

T

by Title

00 **RETURN**

beginning 00.

The above routine will list on the keyboard display monitor all pictures untitled. in the system. Amongst these should be the three pictures just recorded. These can now be titled using the TITLE routine, e.g.

Picture Buffer: (Example)

A:	98	000098
B:	99	000099
C:	100	000100
D:	101	000101
E:	102	000102
F:	504	000504
G:	621	000621
H:	1053	001053

{ Required Pictures
Required Pictures
Required Pictures

T

Title which picture, A – P.

C

Select picture, then type title.

SUE AT MONTREUX

RETURN

Repeat for all three titles, e.g.

A	98	000098
B	99	000099
C	100	SUE AT MONTREUX
D	101	BRIAN AND SUE ON LAKE
E	102	EMBARRASSED BRIAN!
F	504	000504
G	621	000621
H	1053	001053

Now return to Record/Replay panel. (Note it is not necessary to Quit from the keyboard, the keyboard will automatically shut down about 10 minutes after the last operation).

Still in SET-UP

CLEAR**STACK**

Clear the stack of any previous pictures.

1 0 0

TEMP : 100

Enter picture 100

TAKE**1 0 1**

TEMP : 101

Enter picture 101

TAKE**1 0 2**

TEMP : 102

Enter picture 102

TAKE**STACK**

TEMP : S-

RECORD

PIC : S50

Stack is recorded as stack 50.

Now switch panels to PLAY, and observe main outputs.

STACK 5 0

TEMP : S50

TAKE

Preload stack 50
Picture 100 is written
into preview store.

TAKE

PIC : 100

Picture 100 is output to main store
Picture 101 is written into preview store.

TAKE

PIC : 101

Picture 101 is output to main store.
Picture 102 is written into preview store.

TAKE

PIC : 102

Picture 102 is output to main store.

- (b) Recording three pictures using the GRAB buffer, and building a stack of small sizes for replay 'over the newsreader'.

Select the panels to SET-UP.

CLEAR**GRAB**

Now view the live input video in the Edit output by selecting.

FREEZE OFF

Select also

FRAME OFF to ensure no movement jitter is recorded.

At the required point during the live video, press

GRAB

The picture will break up for approximately 1 second, and then return to live video. The picture at the point of pressing GRAB has now been recorded in the GRAB buffer.

Continue pressing GRAB until a good selection of pictures have been recorded.

These may now be viewed, by pressing

G. VIEW

This will step through the pictures in the Grab buffer each time it is pressed. You may view these pictures as often as you require, and if you decide to keep any, simply press

RECORD

The picture will then be 'transferred' to the main disc area, and removed from the Grab buffer.

[Note that no 'real' recording processes take place again, the DLS 6000 simply reassigns disc area to avoid having to read and write the picture.]

Continue this for three pictures (for this example). These pictures will be given a number at the time of recording, and this should be noted.

If required, new numbers or titles can be added as explained in Section 4.2.1.

Note: To aid other users and to ensure no disc space is wasted, when all required pictures have been transferred from the GRAB buffer, it should be cleared as before, i.e.

CLEAR**GRAB**

For this example, let us assume the three pictures are numbered,

900, 901, 902

We now wish to make a stack of small size pictures.

First, clear the stack.

CLEAR**STACK**

Now, on the effects panel, select,

SIZE ON

A set of crosswires will appear on the EDIT output.

Use the joysticks to select the required 'over the newsreader' size and position.

Now enter the required preselect.

ENTER **A**

Now the stack can be built, e.g.

A ^{ON}

9 **0** **0**

TEMP : 900

TAKE

O/A : 900

9 **0** **1**

Select first picture.

(N)

Put second picture in next window.

9 **0** **2**

Put third picture in second window.

(1)

Now the stack can be recorded, e.g.

STACK **5** **1**

Record as stack 51.

RECORD

Now switch the panels to PLAY.

Select stack 51.

STACK **5** **1**

Select stack 51.

TAKE

Preload stack 51.

TAKE

O/A : 900

TAKE

O/A : 901

TAKE

O/A : 902

The small size pictures are replayed in the required order.

(c) Use of the Don't Care

If immediately after replaying Stack 51, as in example (b) above, stack 50 is loaded and played back, the pictures in stack 50 will be played back at the small size. This is because stack 50 was made as Don't Care. This exercise can be repeated after all examples to see how Don't Care can be used in practice.

(d) Building a Stack with Several Preselect Sizes

For this example let us assume we have pictures available in the range 700 to 799.

Select panels to SET-UP.

First clear the Stack

CLEAR **STACK**

Switch on the cursors on the Edit store.

SIZE *ON*

Use the joysticks to select the required size and position, and then enter into a preselect, e.g.

ENTER **A**

Use the joysticks to select the next required size and position.

ENTER **B**

Repeat for several sizes and positions.

All the required positions can then be reviewed, by ensuring, Size is on, and selecting each preselect in turn, e.g.

SIZE *ON* **A** **B** **C** **D** etc.

When all required sizes have been made, the stack can then be built.

Note: If it has been necessary to TAKE any pictures to enable correct size or position alignments, they will already be in the stack. These must be cleared out first, using

CLEAR **STACK**

Note that this does not affect any preselects built as above.

Build the stack in the method described in Section 3.8, e.g.

7 **0** **0**

TEMP : 700

Select picture number and preselect.

A

TAKE

7 **0** **1**

TEMP : 701

B

TAKE

7 **0** **2**

TEMP : 702

C

TAKE

or even

D

7 **0** **3**

TEMP : 703

TAKE

or

E

7 **0** **4**

TEMP : 704

N etc.

Note that if TAKE is used following the last example, that the picture TAKEn will be inserted in the stack above picture 704.

When this process is finished, the stack can be recorded as before e.g.

STACK 5 3 TEMP : S53 Record as stack 53
RECORD

Switch the panels to PLAY.

Select stack 53, and replay e.g.

STACK 5 3 TEMP : S53
TAKE Preload stack 53.
TAKE Replay the stack.

TAKE

(e) Selecting a Required Size 'On Air'

Let us assume that we have two standard newsreaders positions A and B, and it is never known until the last minute which position a required story, or a sequence of stills, is to be replayed in. This situation is easily catered for by the DLS 6000 in a number of ways. One example is illustrated below:

First Clear the stack buffer,

CLEAR STACK

Now enter as preselects the two required small size and positions, A and B, e.g.

SIZE ON
ENTER A
SIZE ON
ENTER B

Now commence to build the stack, but enter the first picture in the stack twice, once with preselect A, and once with preselect B, e.g.

8 6 1 TEMP : 861
A ON
TAKE

TEMP : 861
 ON

Now enter the remaining pictures in the sequence as 'Don't Care', e.g.

 TEMP : 862
 ON

 TEMP : 863
 ON

etc

When complete, record the stack in the usual way.

 TEMP : S86

Stack 86 is recorded.

For replay of the stack, proceed as follows:

Set the panels to PLAY.

Select stack required (e.g. Stack 86).

 TEMP : S86

Preload Stack 86.

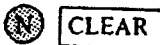
At this stage, the preview output will contain the small size picture in position A. The 1 display will show this same picture, and pressing 1 will illuminate preselect B, showing that it is programmed for position B.

When the decision is made to use position A or B, proceed as follows:-

Push the small round button corresponding to the first picture number and the position NOT required. Hold this down and press CLEAR, e.g.



Check that preselect NOT required is illuminated, e.g. A.



Picture 861 size A is removed from the stack. Picture 861 size B is put into the preview output.

or alternatively,



Picture 861 size B is removed from the stack.

Now subsequent TAKES will replay the stack in the required position, as all other pictures were recorded 'Don't Care', e.g.

TAKE

TAKE

etc.

Note that this process illustrates the flexibility of the 'Don't Care' in the DLS system. It is now hoped that operators can see that this facility can be used in many other situations, even several times in the same stack.

CONCLUSION

It is hoped that these examples have given operators an insight into the flexibility and power of the DLS system. Many results can be achieved in a variety of ways, and by using the basic techniques illustrated in this booklet operators should be able to find methods of operation most suited to their individual requirements.

APPENDIX 1

MATTE/BORDER SWITCH COLOURS

ROTARY SWITCH POSITION	BORDER	MATTE
1	Thin Black	Picture Only Key
2	Thin White	White
3	Thin Red	Red
4	Thin Blue	Blue
5	Thin Green	Green
6	Thin Yellow	Yellow
7	Thick Black	Black
8	Thick White	Grey
9	Thick Red	Red 2
10	Thick Blue	Blue 2
11	Thick Green	Green 2
12	Thick Yellow	Yellow 2



DLS 6000/1 OPERATORS INSTRUCTION MANUAL OPERATIONAL CHANGES FOR V3 SOFTWARE

Versions of DLS 6000/1 Library systems software marked V3 onwards (as issued from January 1984) have a number of improvements, additional features, and changes to earlier versions of software. To check which issue is installed in your machine, switch the PLAY/SETUP switch on the Record/Replay panel to its centre position (OFF). The picture window will now display the current software issue (e.g. DLS 6000 V3.2).

Note: If nothing is displayed at this time either the issue of software is a V.1 version, or the control panels are not communicating with the DLS 6000 mainframe.

1. NEW FEATURES

The new features available on the V3 software are as follows:-

- (a) The ability to use Removable Disc Cartridges. This is explained in detail in the section Removable Disc Cartridges.
- (b) The ability to use the Quantel Central Lending Library. Full operational details of the Central Lending Library operation (if fitted) are explained in a separate booklet.
- (c) The date may be set, and is then automatically added to the title of all pictures recorded on that day.
- (d) Each User may set his own Default Picture or Stack title.
- (e) Default stack or Picture titles are added to the 'standard' default of preceeding zeroes.
- (f) Used stacks may now be listed, and individual stacks may be 'browsed'. (All pictures appear 1/16th size as for picture browse.)

These new features, along with some small operational changes and additions are explained in detail in the following sections.

Note that none of these features or changes affect in any way the use of the main Record/Replay and Effects panels. There is no change in the operation of these; all the new features simply affect the way pictures are organised in the library.

2. REMOVABLE DISC CARTRIDGES

V3 software is capable of handling CDC 84 Mbyte removal disc cartridges. These are treated in the following way.

A removable drive must first be installed on the system, and it will be given a drive number (as any other drive). Once the system is configured for this removable drive (see Service Manual for details), all picture numbers prefixed by the drive number are recorded on the removable cartridge in this drive, e.g. if the removable drive is Drive 2 then all pictures numbered between 2000 and 2999 will be recorded on the cartridge in this drive. Also any stacks numbered 200 to 299 will be recorded on this cartridge.

In this way a removable cartridge can be taken to another DLS 6000, which may have a Removable drive in another drive number, e.g. 5. All the pictures on the removable cartridge will then appear as 5000-5999. Thus generally pictures on a cartridge are numbered N000-N999 where N is the drive number. Similarly stacks are numbered N00-N99.

Pictures are copied to and from a cartridge simply by re-numbering inside or outside the cartridge number range. This may be done from the keyboard. Similarly stacks can be copied to or from a cartridge by renumbering. Any pictures that have to be copied as part of a stack will also be copied.



The copying process uses the EDIT store, and ensures complete integrity of the copied image. When copying the original is not automatically erased, this must be done manually if required.

All pictures and stacks on cartridges are not assigned any USER number, they are accessible by all USERS.

Cartridges can also be installed and titled from the keyboard. The title and status of any cartridge 'run up' in a drive is displayed on the MENU selection of the keyboard VDU display.

3. OPERATIONAL CHANGES ON KEYBOARD CONTROL

The following section explains the new features and their control in detail.

(a) Disc Status

On switching on the keyboard (using ESC) the MENU display now contains additional information:

The Date is shown at the top right hand corner (this must be manually set each day).

The status of the Drives connected now shown in more detail e.g.

DRIVE 0 is labelled SYSTEM, as it holds all the directory information for the DLS 6000. It must be write enabled for any pictures to be recorded on any disc in the DLS.

All other fixed drives in the system are labelled POOL discs, and the number of free fields and the Drive status is shown. Any removable Drives are shown as cartridges with their title (if run-up), also their status:- 'not ready' means the drive is not run-up; 'unusable' means the drive is run up but required initialisation, 'ready' and 'protected' as for other drives.

(b) Additional Commands

To accommodate the central lending library extra commands are available. These are sometimes on an additional display line, and their presence is denoted by . . . at the end of the command lines. Pressing . on the keyboard will display these commands.

(c) MANAGE-SYSTEM Commands

New commands available under Manage-System are:-

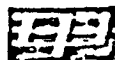
Time Date	:	Set the Time and Date if required. Real Time clock is not yet implemented.
Name-Cart	:	For Titling a removable cartridge.
Report	:	System diagnostic.
Init	:	For initialising a new cartridge.

(d) PICTURE Mode Commands

New commands available under PICTURE are:-

Add-picture	:	Adds pictures to C.L.L. (if installed).
Print	:	Various print options are now available, print buffer, selective print, or Full print.
Central Library	:	See Central Lending Library operation instruction for details.
Search	:	This command works as before, but now simply type the key-word title. If search by number is required instead type

/STARTNUM - ENDNUM



Title : As before, but new keyboard facilities to control the cursor are available.

CTRL W - Moves cursor to end of word.
 CTRL I - Insert character.
 CTRL D - Delete character.
 CTRL E - Move the end of title.
 CTRL B - Move to beginning of title.
 CTRL C - Delete everything after cursor.

Erase : As before, but individual pictures in the buffer may now be erased.

(c) STACK Mode Commands

New commands under this mode are:-

Browse : This will Browse all pictures in a stack (Note: This does not include any programmed effects).
 List : This will list all used stacks (for a given user).
 Print : Will print contents of stack buffer.
 Add : Will Add stack to Central Lending Library (if fitted).

January 1984

D.S

EXHIBIT 10

Redacted

EXHIBIT 11

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EXHIBIT 12

Redacted

EXHIBIT 13

Redacted

EXHIBIT 14

Redacted

EXHIBIT 15

Redacted

EXHIBIT 16

Redacted

EXHIBIT 17

Redacted

EXHIBIT 18

Redacted